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# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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November 11, 1992

Mr. Ron Ryan  
Environmental Coordinator  
SF Phosphates, Ltd. Company  
9401 North Highway 191  
Vernal, Utah 84078-7802

Dear Mr. Ryan:

Re: Reclamation Surety Estimate, SF Phosphates, Ltd., Vernal Phosphate Operations,  
M/047/007, Uintah County, Utah

Please find enclosed an assortment of tables regarding the previous reclamation releases and the currently proposed releases for the Vernal Phosphate operations. Some tables contain the same information grouped differently, but I believe they help clarify what was done and what is being proposed. Please review the tables for accuracy and agreement with your records.

The figures in the Disturbed Acreage Summary table were used to calculate the draft reclamation surety estimate (copy enclosed). Page one of the November 1985 Division bond estimate was the basis for this acreage table. Two pieces of additional data are needed at this time: 1) the current total "mined area" disturbance, and 2) the maximum "mined area" disturbance to occur through the year 1998. The term "mined area" would be defined as only those areas which are actually mined for ore and have not been fully released from further reclamation. Item 2 would include an annual balance sheet showing a total acreage for "mined areas" disturbed, "mined areas" reclaimed and "mined areas" eligible for reclamation release. This information is needed to justify an acreage for the "additional mining" category in the surety estimate. It was assumed that the acreage for "additional mining" listed in the 1985 estimate was optimistic and SF Phosphates wishes to reduce this figure. A value of 500 acres was assumed for this item, although this value may be adjusted.

The 1985 Division estimate covered 1,389 acres of "mining" disturbance. Reducing this figure by the amount of "mining" areas fully released in 1987 (270.5) gives a subtotal of 1,118.9 acres. Reducing this last figure, by fully releasing those "mining" areas partially

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Mr. Ron Ryan

M/047/007

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released in 1987 (126), gives a subtotal of 992.5 acres. Reducing this last figure by the acreage being currently proposed for full release (146.6), gives a total of 845.9 acres of "mining" disturbance. Please comment on the accuracy of this figure in regard to SF's current and future mine plans.

In order to present this matter to the Board of Oil, Gas & Mining for approval at their December 2, 1992, hearing, the board package (bond and reclamation contract) would need to be in a final form by November 16. At this late date, it is unlikely that everything will be in order by the 16th. The next board hearing will be in mid January 1993 with the board package being due in late December 1992. Please find a copy of the Reclamation Contract and Surety Bond form enclosed for your use.

In the future, the maps submitted as part of the annual report should include: panel designations, borders for facility areas, roads, clearly designated acreage parcels (sometimes it is difficult to ascertain which figures refer to which parcels), areas previously released and areas partially released. A disturbed acreage summary table should accompany the annual report and map. The areas described in the table should be identified on the map.

Please provide a response to this letter at your earliest convenience. Please contact me if you have any questions or comments regarding the tables, surety estimate or this letter. Thank you for your cooperation and assistance in completing this permitting action.

Sincerely



Anthony A. Gallegos  
Reclamation Engineer

jb

Enclosures

- tables,

estimate (draft)

RE

Surety bond form also sent

**Vernal Phosphate****M/047/007****November 3, 1992****Reclamation Summary Grouped by Location**

Acres	Reclaimed	Comments	Released
<b>Camp Canyon</b>			
104	1986	Pre-Law	n/a
1	1983	Pre-Law	n/a
8	1982/84	Pre-Law	n/a
3	1976	Pre-Law	n/a
4	1984	Pre-Law	n/a
19	1984	Pre-Law	n/a
28 (22?)	1984	Pre-Law	n/a
54	1987	Upper Camp Canyon	1987 Partial
30	1985	Pre-Law	n/a
<b>Panel 1</b>			
4	1976	Pre-Law	1983
67	1984	Pre-Law	n/a
5	1976	Pre-Law	1983
13	1976	Pre-Law	n/a
2	1976	Pre-Law	n/a
22	1984	Pre-Law	n/a

Vernal Phosphate			M/047/007
November 3, 1992			
Reclamation Summary Grouped by Location			
Acres	Reclaimed	Comments	Released
<b>Tailings Dam</b>			
38	1986		1992 Candidate
4	1982		1987
5	1981		1987
1	1982		1987
1.5	1981		1987
4	1982	SE of Mill & offices	1987
3	1982*		
<b>Panel A</b>			
2	1979		1987
3	1976		1987
99	1983		1987
13	1980		1987
12	1980		1983
16	1980		1987
17	1981		1987
50	1982		1987
<b>Panel B</b>			
19	1992		1992 Candidate

\*These Division dates differ from those listed in teh operators letter, received September 17, 1992.

Vernal Phosphate			M/047/007
November 3, 1992			
Reclamation Summary Grouped by Location			
Acres	Reclaimed	Comments	Released
Panel C			
4	1986		1992 Candidate
6	1984*		1987
1.5	1985*		1987 Partial
2	1984*		1987
4.5	1985*		1987 Partial
37	1984/85*		1987
31	1985*		1987 Partial
124		Facilities	

Vernal Phosphate		M/047/007	
November 3, 1992			
Proposed Reclamation Schedule			
Panel C	Current & Near Future Mining Area		
Acres	Disturbed	Reclaimed	Released
~ 17	1992	1992/93	Spring 1997
Future			
56	1993	n/a	
56	1994	n/a	
58	1995	n/a	
56	1996	n/a	
53	1997	n/a	

\*These Division dates differ from those listed in the operators letter, received September 17, 1992.

**Vernal Phosphate****M/047/007****November 3, 1992****Reclamation Summary Grouped by Location**

Acres	Reclaimed	Comments	Released
<b>Panel D</b>			
18	1986		1987 Partial
22	1987		1992 Candidate
2	1985		1987 Partial
7	1986		1987 Partial
10	1987		1992 Candidate
10	1987		1992 Candidate
8	1987		1992 Candidate
10.4	1988		1992 Candidate
37.7	1989		1992 Candidate**
4.7	1989		1992 Candidate**
1.8	1989		1992 Candidate**
17.2	1990		Spring 1994 Candidate
6.8	1990		Spring 1994 Candidate
31.5	1990		Spring 1994 Candidate
23	1991		Spring 1995 Candidate
6.6	1992	Assumed Fall Reclamation	Spring 1996 Candidate
105	1992		Spring 1996 Candidate
~ 3	1992		Spring 1996 Candidate
~ 1.5	1992		Spring 1996 Candidate
25	n/a	Roads, etc. in use	

**Reclamation Summary by Year**  
**1990 - 1997**

Reclaimed	Acres	Location
1990	55.5	Panel D
1991	23	Panel D
1992	135.1	Panel D 19 acres in B
1993	76	Panel C
1994	56	Panel C
1995	58	Panel C
1996	56	Panel C
1997	53	Panel C

\*\* Borderline 3 Year Growing Period

Vernal Phosphate		M/047/007
November 3, 1992		
Reclamation Summary Grouped by Release Date		
Areas Fully Released in 1987		
Acres	Location/Description	
50	Panel A	
17	Panel A	
16	Panel A	
7	DWR Plot Panel A	
13	Panel A	
99	Panel A	
3	Panel A	
2	Panel A	
4	Tailings Dam Area	
1.5	Tailings Dam Area	
1	Tailings Dam Area	
5	Tailings Dam Area	
4	Tailings Dam Area	
3	Tailings Dam Area	
37	Panel C	
2	Panel C	
6	Panel C	
270.5 Acres Total		

**Vernal Phosphate****M/047/007****November 3, 1992****Reclamation Summary Grouped by Release Date****Areas Partially Released in 1987**

Acres	Reclaimed	Location/Description
54 (55)	1987	Camp Canyon
31	1985	Panel C
4.5	1985	Panel C
1.5	1985	Panel C
2	1985	Panel D
18	1986	Panel D
7	1986	Panel D
7 (?)	1986 (?)	Panel D
1 (?)	1985	Trees? Duplicate?
126.9 Acres Total		

**Areas Fully Released in 1983**

12	1980	Panel A
4	1976	Panel 1
5	1976	Panel 1
21.0 Acres Total		



**Vernal Phosphate****M/047/007****November 3, 1992****Areas Proposed for Reclamation Release Fall 1992****Areas Partially Released in 1987**

<b>Acreage</b>	<b>Reclaimed</b>	<b>Location/Description</b>
54	1987	Camp Canyon
31	1985	Panel C
4.5	1985	Panel C
1.5	1985	Panel C
2	1985	Panel D
18	1986	Panel D
7	1986	Panel D
7 (?)	1986	Panel D
1 (?)	1985	Trees
<b>126.0 Acres Total</b>		

**Areas Proposed for Full Reclamation Release Fall 1992**

38	1986	Tailings Dam
4	1986	Panel C
22	1987	Panel D
10	1987	Panel D
10	1987	Panel D
8	1987	Panel D
10.4	1988	Panel D
37.7	1989	Panel D
4.7	1989	Panel D
1.8	1989	Panel D
<b>146.6 Acres Total</b>		

Vernal Phosphate			M/047/007
November 3, 1992			
Areas Proposed for Reclamation Release Fall 1992			
Areas Proposed for Partial Release			
Acreage	Reclaimed***	Location/Description	Possible Full Release Date
17.2	1990	Panel D	Spring 1994
6.8	1990	Panel D	Spring 1994
31.5	1990	Panel D	Spring 1994
23	1991	Panel D	Spring 1995
6.6	Fall 1992	Panel D	Spring 1996
85.1 Acres Total			

**Areas Proposed for Partial Release Which Need Verification**

~ 3	Fall 1992	Panel D	Spring 1996
~ 1.5	Fall 1992	Panel D	Spring 1996
105	Fall 1992	Panel D	Spring 1996
109.5 Acres Total			

\*\*\*Assumed reclamation/revegetation took place in the fall of the year indicated.

Vernal Phosphate		M/047/007	
Disturbed Acreage Summary			
Last Revision November 11, 1992			
	Areas in 1985 Surety Estimate	Areas after 1987 Full Release	Areas after 1992 Full Release
Camp Canyon	54	54	0
Panel A	83	0	0
Panel C	122	77	36*
Plant Facilities	50	50	50
Sag Mill	66	66	66
Tailings Pond - Materials	345	345	345
Tailings Pond - Misc.	91	72.5	34.5
Roads	68	68	68
Additional Mining	1,130	1,130	500**
Pipeline	7.5	7.5	7.5
Conveyor	3.5	3.5	3.5
Access Road	5.5	5.5	5.5
Total Acreage	2,025.5	1,879	1,116

\*41 acres of mine disturbance in Panel C are proposed for 1992 release.

\*\*Note approximately 1/2 of the 1985 acreage for proposed additional mining was assumed.

104.6 acres of mine disturbance in Panel D are proposed for 1992 release.

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## RECLAMATION SURETY ESTIMATE

F.S. Industries, Ltd.

M/047/007

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Vernal Phosphate Operations

Uintah County, Utah

Prepared by Utah Division of Oil, Gas &amp; Mining

Last Update

11/06/92

**\*\*This estimate is based on figures in the Nov. 1985 DOGM estimate\*\***

Camp Canyon	0 acres	proposed for full release 1992
Panel A	0 acres	fully released in 1987
Panel 1	0 acres	fully released in 1987

Panel C	36 acres	DAYS>acr	\$/HR	\$
supervisor days		24.0	34.26	6,578
contouring D-9 @	1.5 acre/day	24.0	210.44	40,404
topsoil 633-D @	4 acre/day	9.0	225.30	16,222
seed & fert. D-4 @	10 acre/day	3.6	69.79	2,010
seed @ \$185/acre	>	36	185.00	6,660
fertilizer @ 50 lb/acre	>	36	45.00	1,620
Total				73,494
		\$2,041	per acre	

Plant Facilities	50 acres	DAYS>acr	\$/HR	\$
supervisor days		16.7	34.26	4,568
ripping D-9 @	3 acre/day	16.7	210.44	28,059
seed & fert. D-4 @	10 acre/day	5.0	69.79	2,792
seed @ \$185/acre	>	50	185.00	9,250
fertilizer @ 50 lb/acre	>	50	45.00	2,250
Total				46,918
		\$938	per acre	

SAG Mill Area	66 acres	DAYS>acr	\$/HR	\$
supervisor days		16.5	34.26	4,522
topsoil 633-D @	4 acre/day	16.5	225.30	29,740
seed & fert. D-4 @	10 acre/day	6.6	69.79	3,685
seed @ \$185/acre	>	66	185.00	12,210
fertilizer @ 50 lb/acre	>	66	45.00	2,970
Total				53,127
		\$805	per acre	

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Tailings Pond-Mtl	345 acres	DAYS>acr	\$/HR	\$
supervisor days		34.5	34.26	9,456
discing D-4 @	10 acre/day	34.5	69.79	19,262
seed & fert. D-4 @	10 acre/day	34.5	69.79	19,262
mulcher @	24 acre/day	14.4	280.00	32,200
seed @ \$185/acre	>	345	185.00	63,825
fertilizer @ 50 lb/acre	>	345	45.00	15,525
mulch @ 1 ton/acre	>	345	100.00	34,500
Total				194,030
	\$562 per acre			

Tailings Pond-Misc	34.5 acres	DAYS>acr	\$/HR	\$
supervisor days		11.5	34.26	3,152
contouring D-9 @	3 acre/day	11.5	210.44	19,360
topsoil 633-D @	4 acre/day	8.6	225.30	15,546
seed & fert. D-4 @	10 acre/day	3.5	69.79	1,926
seed @ \$185/acre	>	35	185.00	6,383
fertilizer @ 50 lb/acre	>	35	45.00	1,553
Total				47,919
	\$1,389 per acre			

Roads	68 acres	DAYS>acr	\$/HR	\$
supervisor for		13.6	34.26	3,727
ripping D-9 @	5 acre/day	13.6	210.44	22,896
seed & fert. D-4 @	10 acre/day	6.8	69.79	3,797
seed @ \$185/acre	>	68	185.00	12,580
fertilizer @ 50 lb/acre	>	68	45.00	3,060
Total				46,060
	\$677 per acre			

Pipeline	7.5 acres	DAYS>acr	\$/HR	\$
supervisor for		1.0	34.26	274
seed & fert. D-4 @	10 acre/day	0.8	69.79	419
seed @ \$185/acre	>	7.5	185.00	1,388
fertilizer @ 50 lb/acre	>	7.5	45.00	338
Total				2,418
	\$322 per acre			

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Conveyor w/tunnel	3.5 acres	DAYS>acr	\$/HR	\$
supervisor for		1.0	34.26	274
mulcher @	24 acre/day	0.1	280.00	327
seed & fert. D-4 @	10 acre/day	0.4	69.79	195
seed @ \$185/acre	>	3.5	185.00	648
fertilizer @ 50 lb/acre	>	3.5	45.00	158
mulch @ 1 ton/acre	>	3.5	100.00	350
Total				1,601
\$457 per acre				

Access roads D & E	5.5 acres	DAYS>acr	\$/HR	\$
supervisor for		1.1	34.26	301
ripping D-9 @	5 acre/day	1.1	210.44	1,852
seed & fert. D-4 @	10 acre/day	0.6	69.79	307
seed @ \$185/acre	>	5.5	185.00	1,018
fertilizer @ 50 lb/acre	>	5.5	45.00	248
Total				3,725
\$677 per acre				

Demolition costs (IX BONDING)	DAYS	\$/HR	\$
supervisors	140.0	34.26	38,371
laborers	851.0	27.86	189,671
welders	150.0	39.85	47,820
crane & operator	75.8	185.20	112,231
D-7 dozer	10.5	136.99	11,507
tractor trailer	151.5	111.25	134,835
front end loader	86.0	73.10	50,293
Total			584,728

Revised MRP August 1984	DAYS	\$/HR	\$
supervisors	84.0	34.26	23,023
laborers	425.0	27.86	94,724
welders	40.0	39.85	12,752
crane & operator	25.0	185.20	37,040
D-7 dozer	4.0	136.99	4,384
D-9 dozer	5.0	210.44	8,418
tractor trailer	30.0	111.25	26,700
front end loader	22.0	73.10	12,866
Total			219,906

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Additional mine areas		\$/ACRE	
maximum disturbed acreage	500 ?acres?	2,041	1,020,500

BONDING SUMMARY

	\$	\$/acre
Panel C	73,494	2,041
Plant Facilities	46,918	938
SAG Mill Area	53,127	805
Tailings Pond - Impounded Material	194,030	562
Tailings Pond - Miscellaneous Areas	47,919	1,389
Roads	46,060	677
Pipeline	2,418	322
Conveyor with Tunnel	1,601	457
Access Roads to D & E	3,725	677
Demolition (IX Bonding)	584,728	N/A
Revised MRP Aug. 1984	219,906	N/A
Additional Mining Disturbance	1,020,500	2,041
	SUBTOTAL	
	2,294,426	
Mobilization	6,000	
	SUBTOTAL	
	2,300,426	
ADD 10% Contingency	230,043	
	SUBTOTAL	
	2,530,469	
ESCALATION FOR 5 YRS @ 1.27%/YR	164,818	
	TOTAL	
	\$2,695,287	

ROUNDED TOTAL IN 1997-\$

\$2,695,000

total disturbed acreage= 1,116.0

AVG. COST/ACRE = \$2,415

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